REMARKS/ARGUMENT

I. General

Claims 26 and 29-56 remain pending in the patent application. Independent claim 26 has been amended to address a non-substantive typographical error. Claims 1-25, 27 and 28 have been withdrawn from consideration.

All claims stand again rejected, now for the third time, in view of yet another reference that was available for search and examination purposes when the Application was filed. Applicants respectfully request that its past and following arguments be considered and that the rejections be withdrawn.

II. Priority Claim Under 35 USC § 119

Applicants note, with thanks, the Examiner's acknowledgment of the 35 USC Sec. 119 priority claim in this case to German patent applications 10038441.2, 10038440.4, and 10038439.0, all filed August 7, 2000. Applicants also note, however, that the Form PTOL-326 accompanying the Office Action of July 5, 2005, item 12, does not indicate such priority acknowledgment. Applicants therefore respectfully request that in the succeeding paper such acknowledgment be made of record on the Form PTOL-326 and that a Corrected Filing Receipt be issued.

III. Rejections Under 35 U.S.C. § 102(e)

Claims 26, 32, 38, 41, 43, and 49-56 stand rejected as anticipated by U.S. 5,485,620 to Sadre et al. (hereinafter Sadre). A rejection on the basis of anticipation requires each and every element of the claim, properly construed, to be identically disclosed by the single, cited reference. Applicants respectfully submit that Sadre fails to show each and every limitation of the claim.

As previously discussed in this application and correspondence with the U.S. Patent and Trademark Office, all of which is incorporated herein by reference in its entirety, the pending claims are all directed to methods for debugging programs for industrial controllers. The problems identified and addressed by the present invention are ones that touch upon industrial

controller "engineering systems" versus "run-time systems," and recite limitations that are neither disclosed nor suggested by the art of record, Sadre included.

The distinction between "engineering systems" and "run time systems," which is well known in the art, is also made abundantly clear throughout the application and in particular at such places as paragraphs 0046-0048 and accompanying Figures 1and 2.

An engineering system, in brief, is used for programming an industrial controller. See, e.g., application at 0046.

A run time system, by contrast, receives programs from an engineering system and controls a "technical process" of an industrial controller. See, e.g., id.

According to an aspect of the present invention, the "run time system RTS contains a task control mechanism, which is used in debugging flowcharts." Application at 0047. This permits "the task to which a graphical element has been attached, which has been stopped by a suspend command, [to be] continued with [the] task control mechanism of the run time system." Application at para. 0015. Thus, "the task control mechanism [and accordingly the continuing of suspended commands] can be controlled by programs of the run time system." Id.

Sadre, by contrast, does not disclose anything of the sort. To the contrary, Sadre's disclosure, as relied on in rejecting claim 26 and its dependencies, states that: "Diagnostic Utility 252 enables breakpoints in Structured Text Program 188 by sending internal messages to Program Execution Task 253 and I/O Scanner 251. Program Execution Task 253 is configured by Diagnostic Utility 252 to send I/O status information to event handler 250." Whatever this passage may say, it certainly neither discloses nor suggests using a task control mechanism of a *run time system* to *continue* a suspended command.

Claim 26

Claim 26, now amended for merely typographical reasons, is directed to a method for debugging programs in industrial controllers, where graphical elements are linked using an editor in order to form a graphical flowchart. The method comprises preparing a debugging process, for an industrial control program, based on the graphical flowchart and assigning a suspend command to each graphical element. The debugging process then commences and continues until a suspend command is reached. Once the suspend command has been reached, the location of the flowchart element corresponding to the suspend command is displayed. The method then

continues a task corresponding to a graphical element of the flowchart, that has been suspended by a suspend command, using a task control mechanism of the run-time system. The process then proceeds until the next suspend command is reached.

As described by the specification of the present application at paragraph 15, and as was incorporated from previously cancelled claim 27, the *task corresponding to a graphical element of the flowchart*, if suspended by a suspend command, can be continued by a task control mechanism of the *run time* system. This *run time* system is not disclosed or suggested by the diagnostic utility 252, which does not involve a run time system, but an engineering system, as those terms are understood in the field of industrial control.

Sadre neither discloses nor suggests the limitations of the amendment as claimed, nor does it provide a disclosure that would permit a worker in the field of industrial control to implement what is claimed or enjoy its advantages.

Nowhere does Sadre identify anything to do with programming of industrial controllers having a *run time system* -- as opposed to an *engineering system* -- continuing a task that has been stopped by a suspend commands.

Sadre is deficient art in yet another respect: it fails to disclose the limitation of assigning a suspend command to each graphical element of the flowchart. The language of Sadre relied upon as allegedly showing this recited feature, col. 27, lines 63-65 (claim 9) and Figure 12) not only does not disclose this limitation, but teaches away from it. In particular, the rejection alleges this recited feature is prefigured by a portion of Sadre claim 9, which depends from claim 1. But this is manifestly not the case. Read properly, and assuming without conceding that claim 1 discloses graphic elements at all, claim 9 does not disclose a suspend command being assigned to each graphic element. By incorporating the language of claim 1, claim 9 refers to *at least one* step box and *at least one* action box. If anything, this is virtually the opposite of assigning a suspend command to *each* graphic element.

Because Sadre does not describe or suggest all limitations of the invention as claimed, it cannot anticipate (nor does it suggest or render obvious) claim 26, which is therefore respectfully submitted to be allowable.

Claims 29-31

Claims 29-31 depend from claim 26 and are allowable for the same reasons. In addition, claim 29 patentably distinguishes Sadre in that it recites further limitations relating to the recited task control mechanism none of which, as discussed above, are neither disclosed or suggested by Sadre.

Claims 31 and 32

Claim 31 depends from claim 26 and is allowable for at least the same reasons. In addition, it recites a step of converting structured textual language into a processor-independent pseudo code. The passage from Sadre relied on in rejecting this claim nowhere refers or even suggests conversion to processor-independent pseudo code. For this additional reason, the claim is submitted to be allowable. Claim 32 is allowable for similar reasons.

Claim 34

Claim 34 depends from claim 26 and is allowable for the same reasons. The claim also recites that additional graphical elements are generated by converting user-defined structured text subprograms of the textual language into graphical elements comprising function interfaces of the corresponding structured text subprograms. The language of Sadre relied on in rejecting this claim may mention the words "structured text program," but it decidedly does not disclose generating graphical elements from those programs. For at least this additional reason, claim 33 should be allowed.

Claim 37

Claim 37 depends from claim 34 and is allowable for the same reasons. Still further, it recites that a user can switch between structured textual language, contact plan and function plan as forms of representation for formulation conditions. Sadre, at column 19, lines 14-20 relied on in rejecting this claim, may refer to switching between "sequential program" and "associated continuous program." This, however, does not disclose or suggest the recited claim language; for at least this further reason claim 37 should be allowed.

Claim 48

Claim 48 depends from claim 31 and is allowable for the same reasons. It recites, furthermore, that the re-translation back into motion control flowchart representation is possible by means of marks in the textual language. The language of Sadre relied on to support the rejection fails to disclose this limitation. That language, referring to Figure 10 (which is also deficient) refers to a structured text translation of a sequential function chart. No re-translation back into a flowchart representation is disclosed or suggested. Claim 48 is therefore allowable for this further reason.

Claim 49

Claim 49 depends from claim 26, and is allowable for the same reasons, but recites that steps a-c are triggered in a collective step. Since those steps are not shown by Sadre, nor are they shown in a collective step. Figures 23A and 23B do not appear to show any collective steps, but rather a series of steps – which do not happen to be the steps recited in the claim. Claim 49 is submitted to be patentable over the art of record for this additional reason.

Claim 50

Claim 50, rejected on grounds analogous to those raised against claim 32, is submitted to be patentable for the same reasons.

Claim 52

Claim 52 is an independent claim rejected on grounds analogous to those set forth in the rejection of claim 26.

Applicant respectfully submits that neither the text nor figures of Sadre does not disclose or suggest the limitations of preparing a plurality of debugging processes for programming code for the industrial controller, where the code has a plurality of code levels, conducting debugging for the plurality of processes and displaying the processes on respective interfaces. For at least this reason, claim 52 is submitted to be patentable over the art of record.

Claim 53

Claim 53 depends from claim 52 and is allowable for the same reasons. In addition, claim 53, wherein at least a subset of the plurality of debugging processes corresponds to respective ones of the plurality of code levels and the steps of displaying debugging processes comprises displaying at least a subset of the debugging processes on respective ones of the interfaces. This limitation, said to be shown by Sadre at col. 17, line 62 – col. 18, line 15, does not actually disclose a plurality of code levels, or the display of corresponding debugging processes on respective displays. For this additional reason, claim 53 is submitted to be unpatentable.

Claim 54

Claim 54 depends from claim 52 and is allowable for the same reasons. It also recites that the plurality of code levels comprises a pseudo-code level and a debugging process is prepared for that level. The passage relied upon in rejecting this claim points to language apparently relating to breakpoints in structured text. It does not, however, refer to a plurality of code levels, pseudo code as one of those levels, or the preparing of a debugging process at the pseudo code level. For this further reason, claim 54 should be allowed.

Claim 55

Claim 55, which is rejected on grounds similar to those raised against claim 26, is submitted to be allowable for the reasons set forth above in connection with claim 52.

Claim 56

Claim 56, rejected on grounds similar to those raised in rejecting claim 32, is submitted to be patentable on the basis of the arguments raised above for the patentability of claims 32 and 52.

IV. Rejection of Claim 39 Under 35 U.S.C. § 103(a)

Claim 39 is rejected over Sadre, further in view of U.S. Patent No. 4,837,722 to Sara (Sara). This rejection, however, is misplaced. First, claim 39 depends from claim 38 and is submitted to be patentable on the same grounds.

A rejection under 35 U.S.C. § 103(a) requires the establishment of a *prima facie* case that the claimed subject matter, including all claim elements, would have been obvious to a person having ordinary skill in the art on the basis of either a single prior art reference or more than one reference properly combined. As no such *prima facie* case has been established for these claims, Applicants respectfully traverse these rejections, as set forth more fully below.

The combination of the applied references, moreover, is improper. Sara, relating to digital color television reproduction, is manifestly not analogous to Sadre. Even assuming, without conceding, that Sara supplies the deficiencies of Sadre, one of ordinary sill in the field of industrial software could not reasonably be expected to combine these references without the benefit of hindsight reliance on the present application.

Although the office action admits that Sadre does not disclose a parallel branch in which individual commands are initiated in a given interpolator cycle within a respective parallel branch. Moreover, Sara neither discloses nor suggests a programming language command of a motion control flowchart nor initiating a parallel branch within such a flowchart. For these reasons, no prima facie case of obviousness has been established. Accordingly, claim 39 is submitted to be allowable over the art of record.

V. Rejection of Claim 40 Under 35 U.S.C. § 103(a)

Claim 40 has been rejected as unpatentable over Sadre, further in view of U.S. Patent No. 6,295,606 to Messerges ("Messerges").

A rejection under 35 U.S.C. § 103(a) requires the establishment of a *prima facie* case that the claimed subject matter, including all claim elements, would have been obvious to a person having ordinary skill in the art on the basis of either a single prior art reference or more than one reference properly combined. As no such *prima facie* case has been established for these claims, Applicants respectfully traverse these rejections, as set forth more fully below.

As described in Applicants past two amendments, claim 40 depends from allowable claim 26 and is therefore patentable. Moreover, the combination of references lacks propriety. Messerges relates to cryptography and, more particularly, to leakage attacks on microelectronic assemblies. One of ordinary skill in the field of industrial software could not have been expected to look to this field to identify solutions in his or her own field, nor has any motivation been identify as to why, much less how, one would combine Sadre and Messerges, or how one would pick and choose among their disclosures without relying, impermissibly, on Applicants' disclosure. Even assuming, without conceding, the references could be combined, their combination would neither disclose nor suggest all of the limitations of the claimed invention.

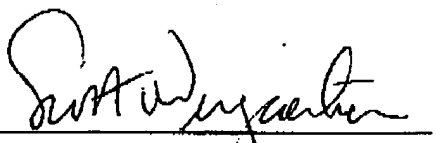
The passage of Messerges relied upon to support the rejection fails to describe or suggest function blocks, much less setting parameters for the function blocks by mask input in the display associated with the motion control flowchart. For these various reasons, claim 40 is submitted to be patentable over the art of record.

CONCLUSION

Upon entry of this Amendment, claims 26, 29-56 are pending in the application. Applicants submit that the claims, for the reasons set forth above, are in condition for allowance. Reconsideration and allowance are therefore respectfully requested. The Commissioner is authorized to charge any necessary fees to Deposit Account No. 23-1703.

Dated: January 5, 2006

Respectfully submitted,



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